

# Abstract Submission Template

-authors-

E. Kwan(LLNL), C.R. Howell, R. Raut, G. Rusev, A.P. Tonchev, W. Tornow-Duke/TUNL

A.S. Adekola, S.L. Hammond, H.J. Karwowski-UNC/TUNL

R. Pedroni-NCA&T

J.H. Kelley- NCSU/TUNL

-authors-

-title-

Discrete deexcitations in  $^{235}\text{U}$  from Nuclear Resonance Fluorescence

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-abstract-

Systematics of the even-even rare-earth nuclei suggest a concentration of M1 excitations peaking around 3 MeV with a  $\Sigma B(M1)^\uparrow$  strength of  $\sim 3\mu_N^2$ . In addition, a linear dependence on the square of the ground-state deformation was observed in the systematics of the  $\Sigma B(M1)^\uparrow$  strengths. The actinide region is interesting for investigation of the "scissors" mode of  $M1$  excitations because it has neutron-rich nuclei with large deformations. Evidence of M1 resonances concentrated around 2.0-2.5 MeV were found in  $^{238}\text{U}$  &  $^{232}\text{Th}$ . A research program has been initiated at TUNL to measure dipole transitions in the actinide using HIγS. Nearly monoenergetic & circular polarized  $\gamma$ -ray beams below 3.0 MeV was used to measure transitions in  $^{235}\text{U}$ . More than 20 transitions in  $^{235}\text{U}$  were observed. The integrated cross sections,  $B(M1)$  strengths, and branching transitions intensities will be presented and compared with previous measurements.

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